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#### THE

# PLAGUE

# MARSEILLES

#### CONSIDER'D:

With REMARKS upon the PLAGUE in General, flowing its Cause and Nature of INFECTION, with necessary Precautions to prevent the spreading of that DIREFUL DISTEMBER: Publish'd for the PRESERVATION of the People of GREAT BRITAIN.

Manuscript of a Graduate Physician, who resided in London during the whole Time of the late Plague, Anno 1665.

#### By RICHARD BRADLEY F.R.S.

The SECOND EDITION.



#### LONDON:

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# HARVARD MEDICAL LIBRARY



IN THE
Francis A.Countway
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BOSTON



account o Land as

# Sir Isaac Newton,

President of the Royal Society, &c.

bly, whole Influenced, RI Sort wild the Language and of the Language and t



O Act under Your Influence, is to do Good, and to Study the Laws

of Nature, is the Obligation I owe to the Royal Society, who have so wisely placed Sir Isaac Newton at their Head.

A 2 The

# DEDICATION.

The following Piece, therefore, as I design it for the Publick Good, naturally claims Your Patronage, and, as it depends chiefly upon Rules in Nature, I am doubly obliged to offer it to the President of that Learned Assembly, whose Institution was for the Improvement of Natural Knowledge.

O Si Fam, Sir

who have to rillity plans bir

With due Respect,

Tour most obliged,

Humble Servare

R. BRADLEY,



Occasion for a Preface to this Treatife, if the last Foreign Advices had not given us something particular relating to the Pestilence that now rages in the South Parts of France; and what may more particularly recommend these Relations to the World, is, because they come from Physicians, who resided at the Infected Places.

The

The Physician at Aix gives us the following Account.

The Contagious Distemper, which has become the Reproach of our Faculty here for above a Month past, is more violent than that at Marseilles; it breaks out in Carbuncles, Buboes, livid Blisters, and purple Spots; the first Symptoms are grivous Pains in the Head, Consternations, wild Looks, a trembling Voice, a cadaverous Face, a Coldness in all the extreme Parts, a low unequal Pulse, great Pains in the Stomach, Reachings to Vomit, and these are follow'd by Sleepiness,

Deliriums, Convulsions, or Fluxes of Blood, the Forerunners of sudden Death. In the Bodies that are open'd, we find gangrenous. Inflammations in all the lower Parts of the Belly, Breast and Neck. Above fifty Persons have died every Day for three Weeks past in the Town and Hospitals. Most of them fall into a dreadful Phrenzy, so that we are forc'd to tie them.

The other is a Letter from a Physician at Marseilles, sent to John Wheake, Esq; who was so kind to give me the Abstract.

Mar-

Marseilles Sept. 15. 1720.

"Sir, without with the Burnel was

I Arriv'd here the 8th, and enter'd the Gate of Aix which leads to the Cours, which has always been esteem'd one of the most pleasant Prospects in the Kingdom, but that Day was a very difmal Spectacle to me; all that great Place, both on the Right and Left, was fill'd with Dead, Sick, and Dying Persons. The Carts were continually employ'd in going and returning to carry away the Dead Carcasses, of which there were that Mar-

that Day above four Thousand. The Town was without Bread, without Wine, without Meat, without Medicines, and in general, without any Succours.

The Father abandon'd the Child, and the Son the Father; the Husband the Wife, and the Wife the Husband; and those who had not a House to themselves, lay upon Quilts in the Streets and the Pavements; all the Streets were fill'd with Cloaths and Houfliold - Goods, strew'd with Dead Dogs and Cats, which made an insupportable Stench. Meat was Sold at 18 to 20 Sous per Pound, and was only distributed

stributed to those that had Billets from the Confuls: This, Sir, was the miserable State of this City at that Time, but at present, Things have a better appearance; Monsieur le Marquis de Langeron, who Commands here, has caused the Dead to be Buried, the Cloaths and Goods to be burnt, and the Shops to be open'd, for the Sustenance of the Publick.

Two Hospitals are prepar'd where they carry all the Sick of the Town, good Orders are daily re-establish'd, and the Obligation is chiefly owing to Monsieur de Langeron, who

who does Wonders. However, there is not any Divine Service Celebrated, nor are there any Confessors. The People die, and are buried without any Ceremonies of the Church; But the Bishop, with an undaunted Courage, goes thro' the Streets, and into Publick Places, accompanied with a Jesuit and one Ecclesiastick, to Exhort the Dying, and to give them Absolution; and he distributes his Charity very largely. The Religious Order have almost all perish'd, and the Fathers of the Oratory are not exempt; it is accounted, b 2 that

#### PREFAGE.

that there have died 50000 Persons. One thing very particular is, that Monsieur Monstier, one of the Consuls of the City, who has been continually on Horseback ordering the Slaves who carried away the Dead in Carts, or those that were Sick, to the Hospitals, enjoys his Health as well as he did the first Day he began; the Sickness seems at present to abate, and we have the Satisfaction to fee feveral whom we took under our Care at the Beginning of the Sickness, promise fair towards a Recovery. The Sickness however, is of a very extraordianch .

nary Nature, and the Observations we have in our Authors, have scarce any Agreement with what we find in this: It is the Assistance of Heaven we ought to implore, and to wait for a Blesling from thence upon our Labours.

I am, &c.

expect at this Seafar, man

We may observe, that the Contagion now spreading it self in Foreign Parts, has nearly the same Symptoms that were observed in the late Plague at London; so that what Medicines were then used with good Success, may direct not on-

ly the People of England in the way of Practice, if God Almighty should please to afflict us with that dreadful Distemper, but be serviceable likewise to the Infected Places abroad. There is room enough to hope, the approaching Cold, which we naturally expect at this Season, may prevent its spreading among st us for some Months, 'till the Air begins to warm, but the Seeds of that Venom may be brought over in Merchandizes even in the coldest Months, and according to the Nature of Insects will not hatch, or appear to our Prejudice, 'till the hotter Seafons. For to suppose this Malignant Di-

Distemper is occasion'd by Vapours only arising from the Earth,
is to lay aside our Reason, as I
think I have already shewn in
my New Improvements of
Planting, &c. to which my
Reader may refer.



THE

Distance is unafted by I a
you really a like for Teafie, as I

show I have abouty here in

wy New In provenence of

Planting, Se. to robin' any
Reader may refa.





THE

# PLAGUE

AT

# MARSEILLES

# CONSIDER'D, &c.

H E Deplorable Condition of the Marseillians, and the Danger that all the Trading Parts of Europe are now in, of being Infected by the Plague which rages in the South Parts of France, and every Day spreads it self more and more over the Neighbouring Countries, gives me occasion to Publish some Papers which would never have otherwise appeared in the World.

When

When I consider the melancholy Circumstances of the People of Marseilles and other infected Places, how they are now divested of Relief, and brought into that miserable State, that even every Man is terrified at the Approach of his dearest Friend, and the very Aspect of our Neighbours strike such Horror and Consusion in us, as if they brought our Death and Destruction with them; it is then surely time for every one to contribute all that in him lies to prevent the Progress of so direful a Calamity.

The good Counsels of our Nation, therefore, to prevent as much as possible the Infection which might be brought among us by Merchandizes coming from Infected Places, have wisely order'd strict Quarantine to be perform'd, before either the Sailors or Goods can be brought ashoar.

The Neighbouring Nations of Trade, have follow'd our Example, but the Hollanders in an extraordinary manner, have even order'd the Burning the very Ships and Goods coming from Marseilles, and have been so cautious, as to suffer none of the Passengers to come on Shoar, without first being distrob'd of all their Apparel, and even to be

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well wash'd with the Sea Water, and then likewise to perform Quarentine in a little Island, remote from the Inhabitants. I could mention many Relations we have had, of the Sufferings of the poor People belonging to Marseilles, who to avoid the dismal Consequences of the Plague, have flown for Refuge into the Country, and have either been stary'd to Death, or Murder'd by the Country People; but yet we find, that notwithstanding all these Precautions, that Pestilence continues to destroy as much as ever, and makes its advances every Day more and more towards us.

It is computed that about 60000 are Dead of the Plague at Marfeilles, and that there are not now (October 20. N. S.) above 14000 Persons left in that Town, including 10000 Sick; and at Aubagne, out of 10000 who retir'd thither from Marfeilles, above 9000 are Dead.

On this fad Occasion of the Ruin of Marfeilles, especially since there is talk of Burning that Town, it may not be unseasonable to give an Account of it.

Marseilles is one of the most Considerable Cities in France, and the most po-

pulous and most trading Town of all Provance. It is so Ancient, that it is reckoned to have been Built upwards of six hundred and thirty Years before the Birth of our Saviour. It was once a very flourishing Republick; and its University was in such Esteem, as drew Students thither from all Parts of Europe.

Marseilles is situate at the Foot of a Hill, which rises in the Form of an Amphitheatre in proportion to its Distance from the Sea. The Harbour is Oval, and bounded by a Key about fourteen hundred Paces long, upon which stand the handsomest Houses in the Town. It affords a very delightful Walk, Part whereof is taken up in the Day-time by the Working Gally-Slaves Stalls, where you ' may furnish yourself with Cloaths and other ' Necessaries; the Entrance of the Harbour is shut up by a Chain supported at certain Distances by three Stone-Pillars; so that only one large Ship can pass at a ' time, tho' the Haven will contain about Five hundred. And hither are brought ' all forts of Commodities from all Parts of the known World.

Marfrille is one of the most Coulder-

as the street of the The Cathedral Church, call'd Notre Dame la Majeure, whereof S. Lazarus ' is Patron, is very Solemn. It was former-' ly a Temple dedicated to Venus, or to Diana of Ephesus. Its Form is Irregular; but it was not thought proper to add or ' diminish any Thing. There remain ' several large Columns, on which stood the Idol. The Treasure of this Church is ' very rich. Here you see the Head of S. Lazarus, that of S. Cannat, a Foot of S. · Victor, and many other Relicks. ' the Cathedral, is a Chappel built upon ' the Spot where (the Marseillians tell you) S. Mary Magdalen preach'd the Gospel to the Idolaters as they came out of the 'Temple.

'Notre Dame des Acoules is also a fine large Church, which was formerly a Temple facred to the Goddess Pallas. In that of S. Martin, which is Collegiate and Parochial, is preserv'd a Silver Image of the blessed Virgin, five Foot and a half high, the Crown and Ornaments whereof are very rich, The Church of S. Saviour, now belonging to a Nunnery, was anciently a Temple of Apollo. All these Places are so many Proofs of the Antiquity

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quity of Marseilles, as well as two other

" Temples near the Port, with two Towers,

- viz. that of S. John, which is a Com-
- mandry of the Knights of Malta, and

that of S. Nicolas.

The Abby of S. Victor, of the Order of S. Benedict, is situate at the Foot of

the Citadel. It resembles a Castle, being

encompass'd with Walls, and set off with

'Towers. At the Front of the Church are

these Words address'd to S. Victor;

#### Massiliam verè, Victor, civesque tuere,

In a Chappel on one side of the Epistle, you see the Head of that Saint, in a Shrine

' of Silver guilt, finely Wrought, which was given by Pope Urban V. whose Tomb

is on one fide of the Choir, There are many

other Relicks in this Church. You then

descend a large Stair-Case into the Church

under Ground, where the Chappels visited

by the Curious, are full of Holy Bodies.
There they they you the Tomb of S

There they shew you the Tomb of S.

Eusebius, and those of forty five Virgins

who disfigured themselves to terrifie the

Vandals who put them to Death. Here also you see St. Andrew's Cross entire,

the Branches whereof are seven Foot long

and

'and eight Inches Diameter. In one of these subterraneous Chappels is a little Grotto, wherein S. Mary Magdalen, (they tell you,) upon her Landing at Marseilles began to do Penance. They add, that she Inhabited it six or seven Years: Her Statue likewise is represented, lying at the entrance of this Grotto. There is also a rich Chappel of our Lady, wherein no Women are permitted to enter. This Order was made, upon the Vulgar Notion, of a Queen's being struck Blind, who had the Temerity to venture into it.

'In Marseilles you observe likewise the Monasteries and Churches of the Carthusians, the Monks of St. Anthony, the Trinitarians, Jacobins, Augustins, Baresooted Carmelites, Carmelites, Baresooted Carmelites, Cordeliers, Observantins, Servites, Minims, Capuchins, Recollects, de la Mercy, Feuillans, Jesuites, Fathers of the Oratory, and of the Mission. There are also Benedictine Nuns, Dominicans, Nuns of S. Clare, Capuchins, Carmelites, Bernardines, Urselins, Nuns of the Visitation of Mercy, and of the good Shepherd or Respective, and a Commandry of Malta.

The Citadel of Marseilles is near the Port, extending its Fortifications to the ' Entrance of the same; and yet it commands the Town. The Key which lines ' this side of the Harbour, from Fort S. Nicolas to the Arfenal, is about fifteen ' hundred Paces long, and is Adorned with handsome Ware-Houses and Dwelling-Houses, Here is the great Hospital for ' Sick Slaves, which was formerly the Ar-' fenal 'till the New one was built. Six ' large Pavilions, as many main Houses, and a great Square Place, big enough to build several Galleys at a time in, form the Design of it. In this Place are two clarge Basons, as long and as deep as a Galley, in each of which, when a Galley ' is ready to launch, they open a small Sluice which kept up the Sea Water.

'This great Building makes one entire 'Front of the Port, three hundred Paces in Length; the Harbour of Marseilles, is 'thirteen hundred Paces long, and the Circumference about three thousand four hundred Paces. The Streets of the old 'Town are long, but narrow; those of the 'New are spacious, and well Built. The 'Chief is that, they call le Cours, which is

near

# [97

e near forty Paces broad, in the middle of which is a Walk, planted with

- four Rows of young Elms, which,
- with the Keys, are the Places of publick
- Resort.
- 'The Town-House which they call La Loge, is situate upon the Key over against the Galleys. Below is a large Hall, which ferves the Merchants and Sea-faring Men for an Exchange; and above Stairs, the Confuls, Town - Counsellors, and others concerned in the Civil Administration have their Meeting. The most valu-' able Piece in this Building is the City-
- Arms in the Front, Carved by the famous · Puget.
- · Marseilles seems still to retain somewhat of the ancient Government of its
- ' four Courts' being divided into four
- ' Quarters, viz. S. John, Cavaillon, Corps
- de ville, and Blancaire; each of which
- hath its Governours and other Officers. The
- \* Porte Royalle is well Adorned, having
- on one side the Figure of S. Lazarus, ' and on the other, that of S. Victor.
- ' And in the middle is a Busto of Lewis
- 'XIV. with this Inscription over it, Subcu-

' jus imperio summa libertas.

· The

# [ 01 ]

The Town is encompass'd by good Walls, and a Tetragon which commands a Part of it, is the best of the two Citadels, and within Cannon Shot of a Fort call'd Notre Dame de la Garde, whither the Inhabitants fréquently go to pay their Devotion, and from whence they discover Ships at Sea at a great Distance. This Fort is built on the top of a Mountain, upon the Ruins of an ancient Temple of Venus, called Ephesum.

The Country about this City is low and open for two Miles, agreeably Adorn'd with Villas, Vinyards, and Gardens of Fig-Trees and Orange-Trees, with plenty of Water from a good Spring, which being divided into feveral Branches ferves to furnish the City.

As to the Inhabitants, they are for the most part Poor and Uncleanly, and chiefly Eaters of Fruit, Herbs, and Roots with such like Meagre Fare, nor do they take any Pains to clean the Streets where the meaner Sort have their Habitation. Their Bread is very coarse and high Priz'd; and perhaps what has principally Contributed to the Progress of the Plague among them, was the great Num-

### 

Numbers of those which Lodged together in the same House, as I shall explain hereafter. When I have Examin'd the State of London, when it Suffer'd by the Plague in the Year 1665.

London at the time of the Plague, 1665 was, perhaps, as much crouded with People as I suppose Marseilles to have been when the Plague begun; the Streets of London were in the Time of the Pestilence very Narrow, and, as I am Inform'd, unpaved for the most Part; the Houses by continu'd Jetts one Story above another, made them almost meet at the Garrets, so that the Air within the Streets was pent up, and had not, a duc Freedom of Passage, to purifie it self as it ought; the Food of the People was then much less Invigorating than in these Days; Foreign Drugs were but little in Use, and even Canary Wine was the highest Cordial the People would Venture upon; for Brandy, some Spices, and hot Spirituous Liquors were then not in Fashion; and at that time Sca-Coal was hardly in Use, but their firing was of Wood, and, for the most part, Chestnut, which was then the chief Furniture of the Woods about London, and in such Quantity, that the greatest Eforts were made by the Proprietors, to

to prevent the Importation of New-castle Coal, which they represented a an unwholsome Firing' but, I suppose, principally, because it would hinder the Sale of their Wood; for the generality of Menwere (I imagine) as they are now, more for their own Interest than for the Common Good.

The Year 1665 was the Last that we can fay the Plague raged in London, which might happen from the Destruction of the City by Fire, the following Year 1666. and befides the Destroying the Eggs, or Seeds, of those Poisonous Animals, that were then in the Stagnating Air, might likewise purific that Air in such a Manner, as to make it unfit for the Nourishment of others of the same Kind, which were Swimming or Driving in the Circumambient Air: And again, the Care that was taken to enlarge the Streets at their Rebuilding, and the keeping them Clean after they were rebuilt, might greatly Contribute to preserve the Town from Pestelence ever fince,

But it was not only in the Year 1665 that the Plague raged in London, we have Accounts in the Bills of Mortality, of that dreadful Distemper in the Years 1592, 1603,

[ 13 ]

may observe how many dyed Weekly of the Plague, and Remark how much more that Distemper raged in the hot Months, than in the others, and serve at the same time as a Memorandum to the Curious.



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DACE TO SELECT ON THE

A TABLE, Shewing how many Died Weekly, as well of all Diseases, as of the Plague, in the Years 1592, 1603, 1625, 1630, 1636; and the Year 1665.

#### Buried of all Diseases in the Year 1592.

	1				-
	Total	Pla.		Total	Pla.
March 17	230	3	August 11	1550	797
March 24	351		August 18		
March 31	219	29	August 25	1508	449
April 7	307	27	Septemb. 1	1490	507
April 14	203	33	Septemb, 8	1210	563
April 21	290	37	Septem. 15	621	451
April 28	310	41	Septem. 22	629	349
May 5	350	29	Septem. 29	450	330
May 12	339	38	October 6	408	327
May 19	300	42	October 13	522	323
May 26	450	58	October 20	330	308
June 2	410	62	October 27	320	302
June 9	441	81	Novemb. 3	310	301
June 16	399	99	Novem. 10	309	209
June 23	401	108	Novem. 17	301	107
June 30	850	118	Novem. 24	321	93
July,7	1440	927	Decemb. 1	349	94
July 14	1510	893	Decemb. 8	331	86
July 21	1491	258	Decem. 15	329	71
July 28	1507	852	Decem. 22	386	39
August 4	11203	983			
AND THE RESERVE TH	26.				

The Total of all that have been buried is, Whereof of the Plague,

25886 11503

Buried

## [ 15 ]

#### Buried of all Diseases in the Year 1603.

20 10-1	mr.	Total	Pla.	Total Steel	TO:	Total	Pla.
March	17	108	3	July	21	1186	917
100	24	60			28	1728	1396
Bright	31	78	6	August	4	2256	1922
April	7	66	4	. T. 255	II		1745
	14	79	4 8	UE 1025		3054	
242 26	21	98		C		-	2539
7 Thomas	28	109		Septemb.		3385	
May	5	90	· 18	12 12 12 10	_		2724
	12	112	22	11 18		3129	
	19	122	32	12 41		2456 1951	
June	2	114	30	October		1831	1641
June	9	131	43	October			1149
	15	144	59	P. (P.)	20		
	23	182	72	100	27	,	
	30	267	1	Novemb.		7371	594
July	7	445	263		IO	545	
	14	612	424		17	384	
		-			24	198	105
The Out-				Decemb.	I	222	102
rishes this					8	163	55
Week were					15	20C	96
joined with					22	168	74
the City	y.	1			- 1		1

The Total this Year is, Whereof of the Plague,

37294

Buried

# f 16 ]

#### Buried of all Diseases in the Year 1625.

419 114	Total	I Pla.	AZE MERKE	1Total	Pla:
March	17 262	1000	August 1	1 4855	
ZVZ USZ USZ	24 226	4 1/		85205	
225191	31 242			5 4841	
April	7 239		10		3344
ELECTI	14 256	24		8 3 1 5 7	
\$183 E	21 230				1612
\ <u>.</u>	28 3.09	26	2	2 1994	1551
May	5 292	1 - 1		9 1236	852
010161	12 232	1 '1	October	6 833	
NAL PROPERTY	19 379			3 815	
25.11/4	26 401		1000 1000	0 651	A STATE OF THE REAL PROPERTY.
June	2 395			7 375	
1801 2	9 434		TICO TENANT	3 257	
1000	16 510		DECKE STATE	0 319	1 -
	23 640		TOTAL CONTRACTOR OF THE	7 274	1
Tolar	30 942			4 231	.27
July	7 1 2 2 2	1 / / - 1	December	1 190	
Type	21 2850		0 10 1		
1001	28 3 5 8 2			5 168	
August		3659		2 157	128
ziuguit	414,7 1	الادمدار	51- 10	Prince !	- 19
error erro .	Y			13.92	19.1

The Total this Tear is, Whereof of the Plague,

51758 35403

## [17]

#### Buried of all Diseases in the Year 1638.

200	tal	Pla.	THE PLANT !	Total	Pla.			
June 24	205	19	23	274	57			
July i	209	25	30	269	56			
8	217	43	October 7	236	66			
15	250	50	14		73			
22	229	40	21		60			
29		77	28	214	34			
August 5	250	56	November 4		29			
12		65	11	215	29			
19		54	18	200	18			
26	270	67	25	226	7			
September 2	230	66	December 2	22 I	20			
9	259	63	9	198	19			
16	264	68	16	_	5			
10	2041			212	,			
Buried in the or Parishes within the)								
Buried in the 97 Parishes within the 2696 Walls,								
777								
Whereof of the Plague, 190								
Buried in the 16 Parishes without the \ 4813								
vvalle,								
				10.	603			
Buried in the 9 Out-Parishes in Middle-								
jew and durrey, and at the Legi-bongs,								
Whereof of the Plague, 524								
Buried in Westminster, 566								
Whereof of the Plague, 31								
TI T. I C II.I D . I . I .								
The Total of all the Burials this time, 10545								
Whereof of the Plague, 1317								
		L	)	B	uried			

#### Buried of all Diseases in the Year 1636.

MAK!	M	Total	Pla.	(67 b	46	Total	Pla.
April	7	119	2	July	7		81
000	14	205	4		14	372	104
This Week	these	320	18/10	16 312	21		
Parishes	were			72 319	28	423	151
added: St garet	.Mar- West-		-	August	4	491	206
minster,		5		10 10 10 10 10 10 10 10 10 10 10 10 10 1	11	538	283
beth Paris	h, St.	17/11	18	13 -13	18	638	321
Mary New				1 y 020	25	787	429
ton, R Parish, St		11	V-L	Septemb	. 3	1011	638
ry Iflin		3		1/4 17.2	8	1069	650
Stepney.	and	100	22001	11 113	15	1306	865
Hackney rishes.	Pa-	,		13 1113	22	1229	775
	2 1/2			0.0	29	1403	928
April	21	285	14	October	6	1405	921
2435	· 28	259	17	MIN TR	13	1302	792
May	5	251	10		20	1002	555
DE B	12	308	55	ine Plant	27	900	458
1104 4	19	299	35	Novembe	er 3	1300	838
	26	330	62		10	1104	715
Tune	2	339	77	Visit in	17	950	573
and 2	9	345	87		24	857	476
3	16	381	103	December		614	321
77.	23	304	79	The Part of	8	459	167
036	30	352	104	San park	15	385	85
OLD .				Marie Land			11570

The Total of the Burials this Tear, is 2
Whereof of the Plague, 1

23359

## [19]

#### Buried of all Diseases in the Year 1664.

	Total	Pla.	0.31000	Til	Total	Pla.
Decemb. 27			June	13		
January 3		n'sy	3 4110	20		
10		n's	Ulbi ul	27		
17	1		July		1006	
24		100			1268	
31						1089
February 7					,	1845
14		1	August			2010
21		200	3			2817
28		100	1/			3880
March 7	- /		Contract of the Contract of th			4227
14		,				6102
21			Septemb	er 5	8252	6978
28						6544
April 4		1000	- M - 17 11			7165
11						5533
18		100	October	3		,,,,,
25		2		10		.000
May 2		684		17		
interest of 9	347	9		24	1	
16				31		
23			Novemb	er 7		
30				14		
June 6	3				1	

We may observe from hence, that the Months July, August, September, and October, the Plague was at the greatest height, and even in those Months, all other Distempers had greater Power over Human Bodies than in the others. When I consider this, I cannot help taking Notice, that in those Months we have our chief Fruit Seasons, and when it happens that there has been a Blight in the Spring, or the Summer has not given our Fruit due Maturity, I suppose that the Habit of the Body is so disposed as, to receive Infection more readily than in Years that either afford us little, or else very Ripe Fruit.

Again, in those warm Months, Isind that we have vast Varieties of the smaller kinds of Insects floating in the Air, and it is a thing constant, that every Insect from the greatest to the smallest has its proper Nidus to hatch and perfect it self in, and is led thither by certain Essluvia which arise from that Body which is in a right State for the preservation of it. In the Blight of Trees we find, such Insects as are appointed to destroy a Cherry Tree, will not injure a Tree of another Kind, and again, unless the Leaves of some Trees are bruised by Hail, or otherwise Distemper'd, no Insect will

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invade them; so in Animals it may be, that by ill Diet the Habit of their Body, may be so altered, that their very Breath may entice those poisonous Insects to follow their way, 'till they can lodge themselves in the Stomach of the Animal, and thereby occasion Death. We may likewise suppose that where these Insects have met with their appointed Nests, they will certainly lay their Eggs there, which the Breath of the diseased Person will sling out in Parcels, as he has occasion to Respire; so that the Insection may be communicated to a stander by, or else, through their extraordinary smallness, may be convey'd by the Air to some Distance.

It is observable, that all Insects are so much quicker in passing through their several Stages to the state of Perfection, as they are smaller, and the smallest of them are more numerous in their Increase than the others.

Two Years ago when the Plague was at Amiens, I pass'd by that Place, and then found the Contagion began to abate ('twas then about October, and the Rains began to fall, the People told me they were advised to eat Garlick every Morning to guard their Stomachs against Inscetion; but whether it

was the Garlick, or the sudden alteration of the Season that was the occasion of the decrease of that Distemper, we shall examine in another Place, but we may Note, That all the Ground about that City is a Morass, so that there is no coming near it but by the Roads, which are Paved and mark'd out. This Marsh or Morass, as all others do in the Summer Season, produce vast Numbers of Insects which are accounted unwholsome, but as some are of Opinion, it is rather a Noxious Vapour which occasions this Insectious Distemper, I shall mention my Opinion of such Vapours before I conclude.

In the Philosophical Transactions, N° 8. we have the following Observations of Insects which are the Destroyers of Plants.

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'Some Years since there was such a swarm of a certain fort of Insect, in New-England, that for the space of 200 Miles, they poisoned and destroyed all the Trees of the Country; there being found innumerable ble little Holes in the Ground, out of which those Insects broke forth in the Form of Maggots, which turn'd into Flies that had a kind of Sting, which they stuck into

in the property of the state of

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the Tree, and thereby envenom'd and killed it.

'The like Plague is said to happen frequently in the Country of the Cossacks or Ukrani, where, in dry Summers, they are infested with such swarms of Locusts, driven thither by an East, or South-East Wind, that they darken the Air in the fairest Weather, and devour all the Corn of that Country, laying their Eggs in Au-' tumn, and then dying; but the Eggs, of which every one layeth two or three Hundred hatching the next Spring, produce again such a number of Locusts, that then they do far more Mischief than before, unless Rains fall, which kill both Eggs and Insects, or unless a strong North, or North-West Wind arise, which drives them into the Euxin Sea:" And it is very natural to suppose, that if the Winds have this Power over the larger fort of Insects, i. e. of moving them from one Country to another, the smaller kinds, which are lighter than the Air it felf, may be interceptibly Convey'd as far as the Winds can reach.

Dr. Wincler, Chief Physician of the Prince Palatine, gives us the following Account of the Murrain in Switzerland, and the Method of its Cure, in a Letter to Dr. Slare, F. R. S. Anno 1682.

On the Borders of Italy a Murrain infested the Cattle which spread farther into Switzerland, the Territories of Wirtemburg, and over other Provinces; and made great destruction amongst them? 'The Contagion seem'd to propagate it self in the form of a Blue Mist, that fell upon those Pastures where the Cattle Grazed, infomuch that Herds have returned home Sick, being very dull, forbearing their Food, most of them would die away in twenty four Hours. Upon diffections were discovered large and corrupted Spleens, sphacelous and corroded Tongues, ' fome had Angina Maligna's. Those Perfons that carelesly managed their Cattle. ' without a due respect to their own Health, were themselves Insected and Diedaway ' like their Beasts.

'Having had timely Notice of this Lues' from our Neighbours, we made such Provision against the invading Disease, that very sew of those who were insected by the Murrain died. Some impute this Contagion to the Witch-crast of three Capuchins in Switzerland. But the more learned believe it to proceed from some noxious Exhalations thrown out of the Earth by three distinct Earthquakes perceived here and in our Neighbourhood in the Space of one Year.

#### The Method of Cure for the Cattle.

'As soon as ever there was any suspition of the Contagion upon any one of the Herd, the Tongue of that Beast was carefully examined, and in case they found any Aptha or Blisters whether White, Yellow, or Black, then they were obliged to rub, and scratch the Tongue with a Silver Instrument (being about the breadth and thickness of a Six-Pence, but indented on the sides, and having a Hole in the middle whereby it is fastened to a Stick, or Handle, it is saftened to a Stick, must wipe away the Blood with new unwashen Linnen. This done, a Lotion E

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for the Tongue is used, made of Salt and good Vinegar.

The Antidote for the diseased Cattle; is thus described.

Take of Soot, Gun-Powder Brimstone, Salt, equal Parts, and as much Water as is necessary to wash it down, give a large Spoonful for a Dose.

After which we have a further Account of the same Contagion by the same Hand.

two ingenious Travellors, who affured me the Contagion had reached their Quarters on the Borders of Poland, having paffed quite through Germany, and that the Method used in our Relation, preserved and cured their Cattle. They told me the Contagion was observed to make its Progress Dayly, spreading near two German Miles in twenty four Hours. This they say was certainly observed by many curious Persons, that it continually, without intermission, made progressive Voyages, and suffered no neighbouring Parish to escape; so that it did not at the same

time

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added, that Cattle secured at Rack and Manger, were equally infected with those in the Field. It were worth the considering, whether this Infection is not carried on by some volatile Insect, that is able to make only such short slights as may amount to such Computations: For the account of the Ancients concerning the grand pestilential Contagions, is very little satisfactory to this Age, who derive it from a blind Putrefaction, from the incantations of ill Men, or from the conjunction of inauspicuous Planets.

The following Account we have from Dr. Bernard Ramizzini concerning the Contagion among the Black Cattle about Padua, Translated from Acta Erudit.

In the Year 1712 a dreadful and violent Contagion seiz'd the *Black Cattle*, which, like an increasing Fire, could neither be extinguish'd nor stopt by any Human means.

'This First was observed in Agro Vincentino, and Discovered it self more openly in the Country, spreading every way, even to the very Suburbs of Padua, with a cru-

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Destruction of the Cows and Oxen. It

was also in Germany, in many Places;

and is not yet wholly conquer'd.

of this Distemper, Dr. Ramazzini, made a particular Dissertation; in which he inquir'd into the Causes of the Distemper, and what Remedies might be us'd, to put a stop to its violent Course.

It is evident, that this Distemper in Cows and Oxen, was a true Fever, from the coldness of the Cattle at first, which was soon succeeded by a violent burning, with a quick Pulse. That this Fever was pestilential, its concomitant Symptoms plainly show, as difficulty of breathing, a Drowziness at the beginning; a continued Flux of a nauseous Matter from the Nose and Mouth, fetid Dung, sometimes with Blood, Pustules breaking out over the whole Body on the fifth or sixth Day, like the Small-Pox; they generally dyed about the fifth or seventh Day.

The Author tells us, that out of a great Drove, such as the Merchants bring yearly into Italy out of Dalmatia and the bordering Countries, one Beast happen'd to straggle from the rest, and be left behind; which

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5 which a Cowherd brought to a Farm be.

olonging to the Count Borromeo: This Beaft

' infected all the Cows and Oxen of the

' Place where he was taken in, with the

s same Distemper he labour'd under; the

' Beast it self dying in a few Days, as did all

' the rest, except one only, who had a Row-

el put into his Neck.

Tis no strange thing therefore, if from the Effluvia, proceeding from the fick and ' dead Cattle, and from the Cow-Houses ' and Pastures where they were fed, and f perhaps from the Cloaths of the Cowherds themselves, this Insection falling upon a f proper Subject, should diffuse it self so ! largely. When therefore this subtile venomous Exhalation happens to meet with any of the Cow-kind, joyning it self with the ferous Juices and Animal Spirits, 'tis no wonder it should disorder the natural Consistence of the Blood, and corrupt the Ferments of the Viscera; whence it follows, that the natural Functions of the Viscera are vitiated. 4 and the requisite Secretions stop'd. For

<sup>&#</sup>x27;Dr. Ramazzini not only supposes, but afferts, that a Poison of this kind, rather fixes and coagulates, than dissolves the Blood: For beside the formentioned Symptoms

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felf is a Witness; since the dead Carcases being open'd while they are yet hot, little or no Blood runs out; those Animals having naturally a thick Blood, especially when the Fever has continued so many Days. And he adds, that whether this Plague came first from the Foreign Beast, or any other way, it only had its Effect upon some Animal, in which there was the morbid Seminary or Ground prepared for it.

and Paltures where they were fee, and In the dead Bodies of all the Cattle, it was particularly Observ'd, that in the Omas sus, or Paunch, there was found a hard compact Body, firmly adhering to the Coats of the Ventricle, of a large Bulk, and an ' intolerable Smell: In other Parts, as in the Brain, Lungs, &c. were several Hydatides, and large Bladders fill'd only with Wind, which being open'd, gave a disa-' greeable Stink: there were also Ulcers at the Root of the Tongue; and Bladders ' fill'd with a Serum on the sides of it. ' This hard and compact Body, like Chalk, ' in the Omasus, the Author takes to be the first Product of the contagious Miasma. 'He adds a Prognostick, believing that from ' so many Attempts and Experiments, and the LOUIS

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the Method observed in the Cure of this Venom, at last a true and specifick Remedy will be found out to extirpate the poisonous Maglinity wholly: He also expects some mitigation of it, from the approaching Winter and North Winds. He does not think this Contagion can Effect Human Bodies, since even other Species of ruminating Animals, symbolizing with the Cow-kind, are yet untouched by it; nor was the Infection taken by the Air, after the dead Bodies had been carefully Bury-ed.

'As for the Cure of it: From the Chi'rurgical part, he commends Bleeding, burn'ing on both sides the Neck with a broad
'red-hot Iron, making Holes in the Ears of
'with a round Iron, and putting the Root
'Hellebore in the Hole, a Rowel or Seton
'under the Chin, in the Dew-laps; he also
'orders the Tongue and Palate to be often
'wash'd and rub'd with Vinegar and Salt.

decina terrinal entral

'He recommends the Use of Alexiphar'micks, and specifick Cordials; and three
'Ounces of Jesuits Bark, infus'd in ten or
'twelve Pints of Cordial Water or small
'Wine, to be given in four or five Doses; which is to be done in the beginning of the
'Fever

Fever, when the Beast begins to be Sick. Or else two Drams of Sperma-Cæti disfolv'd in warm Wine. Again he prescribes 'Antimonium Diaphoreticum. Against Worms breeding, an Infusion of Quicksilver, or Petroleum and Milk is to be given. 'And lastly, as' to the Food, he directs Drinks made with Barley or Wheat Flower or Bread, like a Ptisane, fresh sweet ' Hay made in May and macerated in fair' Water. In the mean time the Cattle must be kept in a warm Place, and Cloath'd, 'daily making Fumigations in the Cow-'Houses with Juniper Berries, Galba-'num, and the like. As to Prevention, he enjoyns Care in cleaning the Stalls, and scraping the Crust off from the Wall; ' Care also is to be taken of their Food, the ' Hay and Straw not spoil'd by Rain ' in the Making, and he judges their Food ought to be but sparing: He likewise re-' commends currying, with a Comb and Brush; with Setons under their Chin, made ' with a hot Iron run through the Part, ' and kept open with a Rope put through it.

After which we have the Receipt: Or the Ingredients of a Medicine for the speedy Cure

Cure of that mortal Distemper amongst Cows; sent over from Holland, where a like Distemper raged among the Black Cattel.

Recipe Veronicæ, Pulmonariæ, Hyssopi, Scordii, ana M. iv. Rad. Aristolohiæ rotundæ, Gentianæ, Angelicæ, Petasitidis, Tormentillæ, Carlinæ, ana unc. 12. Bac. Lauri & Juniperi, ana unc. 12. Misc. fiat Pulvis.

Bleed the Cow, and give her 3 or 4. Mornings successively, an Ounce of this Powder with a Horn, in warm Beer.

'If the Cow continues Distemper'd, after the Omission 2 or 3 Days, repeat the Medicine for 3 or 4 Days again.

I cannot help taking Notice likewise of the raging Distemper which was among the Cows about London, Anno 1714. it was so Violent and Infectious, that if one had it, all others that came within Scent of her, or even eat where she Grazed, was surely infected; it seized their Heads, and was attended with running at the Nose, and a very nauseous Ereath, which killed them in F

three or four Days. The Herdsmen would not allow it to be the Murrain, nor could give any Account from whence it did proceed, or could find out any Remedy against it; they only tell us the unusual dry Summer, and the continued East-Winds, were the occasion of it. This Distemper had been for two or three Years before it came to us, in Lumbardy, Holland, and Hambrough, to the Loss almost of all their Cattle. The States of Holland caused a Medicine to be published for the Good of those who had their Cattle thus Distemper'd, but having been try'd here, 'twould not Cure one in feven, but rather increased the Infection by keeping the distemper'd Cattle longer alive (by some Days) than they would have been without it. Tis remarkable, that no Oxen had this Distemper, but only Milch-Cows, which were more tender than the Males. The Herdsmen to keep their Cattle from the Infection, let them Blood in the Tail, and rubb'd their Noses and Chaps with Tar; and when any happened to die of it, they were burnt and buried deep under Ground. It began at Islington, spreading it self over many Places in Middlesex and in Essex, but did not reach so far Westward from London as twenty Miles.

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The most general Opinion concerning the Cause of this Distemper, was, that the Cattle were first infected by drinking some unwholsome standing Water, where its probable some Poisonous Insects were lodged and bred; the Summer having been extreamly dry, attended almost constantly with Easterly Winds, the Grassalmost burnt up, and the Herbs of the Gardens destroyed by Insects; but such as they were, (unsit for Table Use) were given to the Cattle. There was likewise so great want of Water, that many were forced to drive their Cows sive or six Miles to it.

The Electuary publish'd upon this Occasion by the States of Holland, was compos'd of most, if not all the Druggs used in
the most serviceable Medicines that were
made use of against the Plague among Men;
most of which Ingredients we know to be
mortal to Insects, as strong scented Roots
and Herbs; but above all, Aromatick Gums
and Saps of Plants; as Rhue, Garlick, Pitch,
Tar, Frankinsense and Olibanum. These
Ingredients are much used in France and
Italy to prevent or destroy Insection, by
burning them and smoaking such Bodies,
Letters, or any other things as are brought from
insected Places, after they have made

Quarentine, and are not suffered to come on Shore 'till they have undergone this Operation.

It is not against Experience, that Insects can live and encrease in Animal Bodies: How often do we find Men, Women and Children troubled with Worms? What varieties of those Insects are often voided by them? And how should that be, if they were not either suck'd into the Stomach with the Breath, or taken into it with some unwholsome Food? For they cannot breed in such Bodies from nothing, without either their Eggs or themselves are brought thither by some Accident: For if they were the natural Produce of Animal Bodies, they would then be alike common to all, which we know they are not.

I have been informed, that in the Year 1714, when this Mortality among the Cows was at its height, that towards the End of the Summer, fome Farmers brought in fresh Cattle, and turning them into the same Fields, where many Cows had died before, they took the Infection and died likewise; but the following Spring, those Fields were void of Infection, and the Cows that were put into them did very well, but what were

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then put into the Cow-Houses, where the sick Cows had been the Year before, were sciz'd with the Distemper, and died; which seems to inform us, that it was the Effect of Insects, which thro' the Warmth of those Stalls, were preserved from the Severity of the Winter's Frost; but such as were left in the open Fields, were destroy'd by the Cold. I have heard that a Woman about Camberwell cured Six in Seven of her Cows, by giving them once a Week, an Insusion of Rhue and Ale-wort.

But it may be ask'd, why these infectious Distempers, subject to Men, Cattle and Plants, are not universal? And why the Plague should not be as well in India, China, the South parts of Africa and America, as in these parts of the World? (For I do not find it has ever been in those Places.) This Query gives me a farther Opportunity to suggest, that Insects are the Cause of it, and that they are brought with the Easterly Winds. In the first place, so far as I can learn, there is not naturally in America any one Kind of Creature or Insect that is found in any other Part of the World, and the Plants likewise are all different from those of other Countries; as it is the same in India, China, &c. whose Products are quite different from what

we find elsewhere. Supposing then that these pestiferous Insects are only the Produce of Tartary, let us consider to what Parts of the World they may be carry'd from thence with the Easterly Winds; and whether India, China, the South of Africa and America, are not beyond their Reach, or can reasonably be affected by them.

Whoever considers the Disposition of the Land and Water in the Globe, may thus account for the Passage of these Insects, with an Easterly Wind from Tartary, to all the Parts of Europe, Asia-Minor, Palestine, Barbary, and other South Coasts of the Mediterranean Sea, whether, 'tis highly probable, they may come, without meeting any thing in their Way to obstruct their Course.

Mountains of Note between Tartary and the places which have been subject to the Plague: The Alps run parallel with the Winds coming from Tartary, and therefore does not any Way hinder their Passage: The Mountains of Dalmatia are not high enough to prevent the Passage; or if they were, the Caspian Sea is sufficiently large to let them pass to the South Parts of Europe, the Mediterranean Sea.

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Sea, and the North Coasts of Africa, even to their most Western Bounds.

Now it may be expected, perhaps, by some, that these Winds should yet continue their Progress as far as America; but as yet, so far as I can learn, these Land-Winds, when they have blown with the greatest Force, and have been of the longest Continuance, have not reach'd farther than about three hundred Leagues beyond the Western Coasts of Europe, which is a Trifle in Comparison of the vast Ocean between Us and America: Besides, it is my Opinion, that the Winds which blow over so vast a Tract of Land, as these Tartarian Winds must do, that I suppose convey and support the pestiferous Insects, are of so different a Nature from the Winds coming from the Ocean, that 'tis likely those Creatures which would subsist in the one, would be destroy'd by the other: So that if I am right in this Conjecture, America cannot be subject to the Plague.

Mount-Atlas, which is a vast Ridge of Mountains, running from the Ocean almost as far as Egypt, and are back'd with the Desarts of Lybia, may very likely obstruct the Passage of these Insects to the South of Africa; and for that Reason, perhaps, secure that

that part of the World from Plagues. So likewise Mount-Caucasus, or Ararat, which is one of the highest Ridge of Mountains in the World, running from East to West, thro' Persia and India, may secure the South Parts of those Countries from the Plague, by stopping the Passage of those infectious Creatures, if any Winds from Tartary should happen to blow them that Way: And as China lies to the East of Tartary, so it must be Westerly Winds which must infect that Country with the Plague, if it proceeds from what I imagine: But we do not yet find that Westerly Winds are frequent in those Parts; or if they are, we may be affur'd they cannot blow at the same time when the Insects are hatch'd and carried the contrary Way by the Wind from Tartary. We are inform'd, that upon the Coast of China, the Winds are so regular, that from October to March they continually blow from the North-East, and from that Month to October, the direct contrary Way.

And Plants are no less subject to be destroy'd by Insects, than Men and Quadrupedes, as I have explain'd in the Chapter of Blights, in my New Improvements of Planting and Gardening.

Plants of all degrees are subject to Blights, which are so variously communicated to them, that sometimes a whole Tree will perish by that Distemper; now and then a few Leaves, or Blossoms only, and perhaps a Branch or two, will be shrivel'd, or scorch'd by it, and the rest remain green and flourishing. I have yet never observed this Discase to happen among Plants, but upon the blowing of sharp and clear Easterly Winds, which are most frequent in England about March; but sometimes happen in other Months. It is very observable, that the Caterpillars generally attend these Winds, chiefly infecting some one fort of Tree more than another, and even then not everywhere uponthe kind of Tree they attack, but some particular Branches only; from which Obfervations I think we may draw the following Inferences, either that the Eggs of those Insects are brought to us by the Easterly Winds, or that the Temperature of the Air, when the Easterly Winds blow, is neceffary to hatch those Creatures, supposing their Eggs were already laid upon those infected Parts of the Treesthe preceding Year.

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The Blights which are attended with large Worms or Caterpillars, seem'd to be rather hatch'd with the East Wind, than that the Eggs of those Creatures are brought along with it; but those Blights which produce only those small Insects which occasion the curling of the Leaves of Trees, may proceed from Swarms of them, either hatch'd or in the Egg, which are brought with the Wind.

Some perhaps may object, that the East Wind is too cold to hatch these Creatures; how comes it then that we find them hatch'd when those Winds reign! Or is it reasonable to conjecture that the same degree of Heat is necessary to enliven an Insect as is required to hatch the Egg of a Pullet? The Infects of Norway, Iceland, and such like cold Climes, must certainly have less Heat to produce them, than Greatures of the same Race must necessarily have in those Climates which lye nearer to the Sun. Every Creature, without doubt requires a different Period of Heat or Cold to enliven it, and put it in Motion, which is prov'd by for many known Instances, that I conceive there is no room for any dispute upon that score.

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But there may yet be another Question, viz. Whether it is not the East Wind of it self that blights, without the help of Infects? But that may be easily resolved on my side; for that if it was the Wind alone that blighted, then every Plant in its way must unavoidably be infected with its Poison; whereas we find the contrary on a single Branch it may be, or some other distinct Part of Plants,

And again, to shew how reasonably we may conjecture that 'tis Insects which thus infect the Trees, let us only consider, that every Insect has its proper Plant, or Tribe of Plants, which it naturally requires for its Nourishment, and will feed upon no other kind whatsoever: Therefore 'tis no wonder to see one particular sort of Tree blighted, when all others escape; as for Example, that Wind which brings or hatches the Caterpillars upon the Apple-Trees, will not any way infect the Pear, Plumb, or Cherry with Blights, because, were the Shoals of Insects natural to the Apple, to light only upon those other Trees mentioned, they would then want their proper Matrix to hatch in; or if they were hatch'd already, G 2 they

they would Perish for want of their natural Food; so that 'tis morally impossible that all sorts of Trees should be blighted at the same time, unless the Eggs of every kind of Insect, natural to each Tree, could be brought at one time with the Wind, or that an Easterly Wind could contain in it at once, as many differing Periods of Cold or Heat, as would be required to hatch and maintain each differing kind of those Creatures.

The common People in the Country seem to be of my Opinion, that Blights are brought by the East Winds, which they are so well satisfied brings or hatches the Caterpillar, that to prevent the too great Progress of Blights, it is common for them when the East Winds blow, to provide large Heaps of Weeds, Chaff, and other combustible Matter on the Wind-side of their Orchards, and set them on Fire, that the Smoak may poison either the Insects or their Eggs, as they are pass'd along. By this Contrivance I have often known large Orchards preserved, when the neighbouring Parts have suffered to the Loss of all their Fruit.

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And I have also seen these Fires made with good Success to destroy the Caterpillars, even after they were hatch'd, and had began to devour the Trees, by suffocating them, and forcing them to drop to the Ground, where they have been swept up in large Quantities, and kill'd. I have heard it affirm'd by a Gentleman of Reputation, that Pepper-Dust; being powder'd upon the Blossoms of any Tree, will preserve them from Blights, which may be, because Pepper is said to be present Death to every Creature but to Mankind. Now altho' this last Secret is too costly for common Use, yet it may be of Service in some particular Place for the Tryal of a new Tree, where a Taste of the Fruit is defired, and besides it helps to inform us, that Blights are occasion'd by Insects, or their Eggs, lodging upon a Plant, and that Pepper-Dust will not suffer them either to live, or to be hatch'd.

Another Remark (which to me is Demonstration) that Blights proceed from Infects, or their Eggs (being brought with the Easterly Winds) was the total Destruction of the Turneps, Ann. 1716, on the West Side of London; about October

we had dry Easterly Winds for a Week or ten Days, and several thousand Acres of Turneps, which were then well grown, turn'd Yellow and decay'd, unless in such Places only as were shelter'd by Hedges, Houses, or Trees, where they remain'd Green 'till the Infects, which came with the Wind in about a Week's Time, destroy'd those also. Some Farmers imagin'd that the Birds which were there in great Flocks, had eaten the Leaves of their Turneps, and contriv'd all Means possible to destroy them, 'till I convinced them that the Birds were rather Friends than Enemies, and came there to feed upon the Caterpillars, which were in fuch great Numbers, that each Turnep-plant had not less than a Thousand upon it; and that Infects frequently pass in Clouds and numberless Armies after this manner, is plain from several Instances, which have happen'd in my Time, and one of them (I think in June, Ann. 1717) passing over London were suffocated, (I suppose) with the Smoak of the Sea-Coal, and drop'd down in the Streets, infomuch that a square Court belonging to the Royal Society was almost. cover'd with them; these were of the Fly Kind, and fully perfected.

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way to not to the older Adinas on thenes, It may be ask'd, perhaps, how these Infects came to destroy the Turneps only, and not touch the other Greens of the Fields, as Cabbages, Carrots, Parsnips, and the like? Every Herb has its peculiar Insect, like the Trees I have mention'd: Nay more than this, the Infects which Nature hath design'd to prey upon the Flower of a Plant, will not eat the Leaves, or any other Part of the fame Plant. The Leaves of Plants have their Insects natural to them, the Bark and Wood likewise have their respective Devourers; and those several Insects have other Kinds, which lay their Eggs, and feed upon them:

I could yet give a much larger Account of Animals and Plants, how they have been particularly Infected, but I rather choose to refer my Reader to the Chapter at large, of Blights and Plagues, in my New Improvements of Planting and Gardening, &c.

By the foregoing Accounts we may observe, that Mankind, Quadrupedes and Plants seem to be infected in the same manner, by unwholsome Insects; only allowing this difference, that the same Insect which is poisonous to Man

Man, is not so to other Animals or Plants, and to on the contrary, we observe likewise, that Pepper which is of Use to Mankind, is poisonous to other Creatures, and tho a Man cannot eat of the Cicuta, or Hemlock, without prejudice, yet a Cow and fome other Animals will eat it to their Advantage, and the Manchanese Apple, which is deadly Poison to almost every Creature is eaten greedily by Goats, and which is strange; the Milk of those Goats is wholsome to Mankind. Again, we may remark that Camphire which may be taken at the Mouth by the Human Race, and is helpful in many Cases, will destroy Infects; for among the Curious who have Cabinets of Rarities, it is a common Practice to lay it in their Drawers and Cases, to destroy the smaller kind of Infects, which would otherwise des vour their Collections.

The Smoaking of Tobacco is helpful to some Constitutions, but was the pure Leaf to be taken directly into the Stomach, it would Purge in a violent Manner, and the Oil of it as I am told is a deadly Poison; however it is to be remarked, that in the time of the last Plague in London, Anno 1665, that Distemper did not reach those who smoak'd

smoak'd Tobacco every Day, but particularly it was judged the best to smoak in a Morning. We have an Account of a famous Physitian, who in the Pestilential time took every Morning a Cordial to guard his Stomach, and after that a Pipe or two before he went to visit his Patients; at the same time we are told, he had an Islue in his Arm; by which, when it begun to fmart, he knew he had received some Infection, (as he says) and then had recourse to his Cordial and his Pipe, by this means only he preserved himself, as several others did at that time by the same Method. I suppose therefore, that the Smoak of Tobacco is noxious to these Venemous Insects, which I believe to be the Cause of the Plague, either by mixing itself with the Air and there destroying them, or else by provoking the Stomach to discharge it self of those Morbid Juices which would nourish and encourage them.

When I consider that the dead Bodies of the miserable People of Marseilles were found full Insects, and that those Worms could be no way so suddenly killed, as by putting Oil or Lemon Juice upon them, it brings to my Mind several Tryals I have made upon Insects of various Kinds, in or

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der to occasion their speedy Death. In these Experiments, I found that most of the larger Kinds would live some Minutes in Spirit of Wine and other spirituous Liquors, when they were forced into them, and that Oil immediately suffocated them, from whence I suppose, the Air, or Breath they draw, is exceeding fine and subtile, and that a thick Air consists of too gross Parts for them to breath, and that fince Oil destroys the larger Kinds of them immediately, the Oleagenous Particles evaporating from such Bodies as Oil, Pitch, Tar, &c. expanding themfelves, and mixing with the common Air, would render it too thick for the smaller Kinds to sublish in.

We observe likewise that all Aromatick Herbs, &c. were found useful in the time of the dreadful Pestilence in 1665, which helps to confirm what I have just now related, for a single Leaf of Rosemary contains at least 500 little Bladders of Oily Juice which by rubbing, break and afford that Grateful smell we find in that Plant, but in that as in all other Aromatick Herbs, was we to bruise the Leaves 'till all those Bladders were broken, the recreating Smell would be lost, and we should find only remaining an earthy, disagreeable Flavour,

vour, arising from the common undigested Sap; so if we take the Leaves of Fifty several Kinds of Aromatick Plants, and after bruising them, make up distinctly the bruis'd Leaves of each into Balls, and dry them by the Sun, or otherwise, they will all afford the same Smell; for the breaking of those Bladders, or Blisters, which yield the different Smells (from the Essence they severally contain) makes them lose all their Spirit or Essence.

In the Culture of these Aromatick Herbs, such as Rosemary, Lavander, Thyme, &c. we may remark, that they are never destroy'd by any Insect, which may still give us a further Proof of the Antipathy all Insects have to them, for which Reason some People are used to smoak their Houses with these Aromatick Herbs, but especially where the Chambers or Rooms are small and close; and it has been proved, that the Burning of Aromatick Gums and Woods, have likewise been useful in purifying the Air in a House, and preventing the spreading of Pestilential Distempers.

In 1665 it was observable, that in Aldermanbury, and other Places, where there were H 2 large

large Ware-Houses of Aromatick Druggs, the Infection did not reach; so that it scems where there is Quantity enough of such Woods or Gums, as yield a strong Smell, we have no Occasion of burning them, the bare Effluvia rifing from a large Mass, haying the same Effect as burning a small Quantity. As every one of these Druggs, or Gums, is more pungent or operative upon the Organs of Smelling, so we may be asfured, the Vapour proceeding from them fill a larger Space in the Air; but perhaps a Tun Weight of the strongest Aromatick among them, in the Body or Mass, will not purifie so much Air as half an Ounce of the same will do by burning; for the Smoak of a few Grains of Tobacco, when the Air is clear, will fenfibly touch the Sméll above forty Yards, tho' a Pound of the Herb unburnt will not affect the Smell above a Foot.

These Observations may serve to inform us, that the burning of Aromaticks may help to keep the Air in an healthful State; but as Men of Business must often change their Station, and pass thro' different Degrees and Tempers of Air, it is for that Reason, that Aromaticks, and strong smelling Roots, Herbs, &c. are recommended to

be taken into the Stomach. The Cordial which we call Plague-Water, compos'd of Aromatick Herbs, has been used with Success, as has also been Conserves of Rhue, &c. and the Use of Garlick in the Amiens Distemper, particularly, is remarkable. To this I may likewise add a Relation I had lately from fome Men of Quality concerning a Plague, which some Years since destroy'd a great part of the French Army: It was observable, that at that Time the Irish Regiments in that Service were preferv'd by rubbing their Bread every Morning with Garlick, which undoubtedly must taint their Breath for many Hours, and so regulate the Air about them, that the unwholfome Infeets could not approach them.

Upon this occasion, I cannot omit observing the extraordinary Remedy for destroying the Insect call'd the Wevel in Corn or Malt, as it was Communicated to me by the Learned Dr. Bentley, Master of Trinity College, Cambridge; that Worthy Gentleman tells me, that the Herb Parietaria, or Peletory of the Wall, is a Sovereign Remedy against the Wevil in Corn or Malt, and according to the Information he has had, an Handful of that Plant being laid here and there in a Grai-

Grainary infected by those Insects, will infallibly destroy them in a Day or two; which Discovery is so useful, that I think it ought to be made as publick as possible, and in this place serves to confirm my Hypothesis, That the Effluvia of some Plants are Destructive to Insects.

In the next place I come to consider, how much a certain Quantity of Air is requisite to preserve a single Animal Body, and the Knowledge of that, is what I account one of the chief Preservatives of Health. I have often been Concern'd to find a Family of six or seven pinn'd up in a Room, that has not contain'd Air enough for the Maintenance of Health in one single Person; but such is the Hardship of our Poor in many Places, and is frequently the Occasion of their Death.

We may easily conceive how this happens, if we examine the Case of the Diving Tub, how short a while a Man can live in it, without a Supply of fresh Air; the occasion of which is, that when he has drawn in with his Breath, all the Grosser Parts from the Air enclosed in the Tub, the rest grows hot and suffocating, by being too much rarifyed.

From

From whence I suppose, a Room of Nine or Ten Foot Cube, will contain Air enough to keep a fingle Man alive for one Day, but if two were to inhabit that Space for the same time, each would receive but half his Nourishment, and so both would be Sufferers; but a Room, perhaps, containing twice that Space, might well enough ferve five People for a Day, supposing that all External Air was kept from Communication with fuch a Room, during the time the People were in it; for, as I have observ'd, that Air has certain Nourishing Qualities in it, for the Maintenance of Humane Life: so when those Nourishing Parts are imbibed, and drawn in by the Lungs, the Air is return'd and flung out as invalid, and cannot be of Use a second Time to the same Person; an Example of which, we find very curioufly demonstrated by Mr. Newyentyte; he tells us, that in making this Experiment, he discover'd that the same Nourishing Quality in the Air, which is necessary to maintain Humane Life, is also necessary to maintain Flame, which he proves thus:

A lighted Candle being fet under a Bell, closely fix'd upon a Table, will burn perhaps a Minute or two in Proportion to the Quantity of Air pent up with the Candle in the Bell; but as foon as the Quality in that Air, which is necessary to feed the Flame, is exhausted, the Candle goes out; this has been often try'd with the same Success; and we find, that by letting into the Bell some fresh Air, a little before the Candle should have gone out, it will fill continue burning: And then to shew that this Quality in the Air is the same which feeds the Life in Humane Bodies, it was try'd, whether the Air, returning from the Lungs, would not have the fame Effect upon the Candle, as the External Air had before, but is had not, the Candle went out at its usual Time: Thus, littleeins, when we fuck in Air for Breath, the Lungs takes what is neceffary for the Nourishment of our Bodies, and returns back the rest. the Air, which is necessary to maintain Hu-

After this we may naturally conclude, that where the Rooms, or Houses are small, there ought to be frequent Admissions of the External Air, but especially where those Rooms or Houses are too much crouded with

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with People, and if it is supposed that the External Air is Infectious, the burning of Aromaticks, Gums, or Herbs, upon the letting in of fresh Air, is necessary.

From the foregoing Observations we may learn, that all Pestilential Distempers, whether in Animals or Plants, are occasion'd by poisonous Insects convey'd from Place to Place by the Air, and that by uncleanly Living and poor Diet, Humane, and other Bodies are disposed to receive such Insects into the Stomach and most noble Parts, while, on the other Hand, such Bodies as are in full Strength, and are well guarded with Aromaticks, would resist and drive them away, by chiefly how necessary it is to allow the Body a Freedom of Air, and how to correct it if it is Insected.

And I shall conclude with some Memorandums taken from the Papers of a learned Gentleman, who in the time of the late Plague in *London* was curious enough to make his Remarks upon the Signs of that Distemper, and the Method of its Cure.

He tells the Plague proceeds first from a Corrupted and unwholsome Air.

The

The S The Second, is putrified Humours, hot Blood, caused by breathing in such corrupt Air; and if the Diet before were perverse, it fills the Body with superfluous Humours.

Concerning the common Fear of Infection, which makes many rich Men, which might and ought to maintain poor visited People; and some Physicians likewise, whose Duty it is to administer Physick to them, flee away, so that in time of great Infection' we hear more cry out for want of Bread and necessary means, than for anguish of the Discase.

Hence also came that inhumane Custom of shutting up of Houses that are visited with Pestilence, dejecting their Spirits, and consequently making way for the Disease, and taking Men from their Labour, which is a digester of Humours, and a preserver of Health; and if the Disease be Infectious (as in their Opinion it is) it is plain Murder, to shut Men up in an infected and destroying Air.

But all Mens Bodies are not full of Humours; if they were, all would be infected.

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After this I find the following Directions to prevent Infection. First, To avoid the Fear of it, and support the Spirits in the next place. Secondly, To keep the Body soluble, and to use the Juice of Lemons often. Thirdly, He recommends a Diet of quick Digestion, and to cat and drink moderately: He prescribes likewise the Smell of Aromaticks, such as Camphire, Styrax, Calamites, Wood of Aloes, &c. and to be taken inwardly, Mithridate, Angelica, and Petasetis-Roots; and, in an express Manner, he recommends Cleanliness, and the Choice of a clear Air.

After Infection he tells us the Signs are, an extraordinary inward Heat, a Difficulty of Breathing, a Pain and Heaviness in the Head, an Inclination to Sleep, frequent Vomiting, immoderate Thirst, a Dryness on the Tongue and Palate; but especially if we discover Risings or Swellings behind the Ears, in the Groin, or other tender Parts of the Body; but this last, where it happens, is of Advantage to the Patient; for he says, in such a Case, the Plague is rarely Mortal, for then Nature has Power to despel the Venom, and drive it from the most noble Parts; and them he recommends Bleeding; but if Spots appear

pear upon the Body, he advises the Use of *Emeticks*, and afterwards *Sudorificks*, which by his Papers, we find he gave with good Success, but he decries the Use of Opiates at the Beginning of the Distemper.

He concludes with Directing of proper Cordials, to refresh and strengthen the Patient, such as Confect. Hyacint. Confect. Alchermes, Pulv. Gasconia, Bezoar Orient. and such like.

But my Worthy Friend, Sir John Colebatch, who has in other Cases declared himself for Publick Good, has, in this, likewise been Careful to provide against the Infection, and especially recommends to his Friends, to collect large Parcels of the Ripe Ivy Berries which are known from the others by their Blackness.

Thus have I given my Reader such a Vein of the *Plague* in general, as may point out to him its natural Cause, Progress of Infection, and the Methods that have been used by the Learned, to prevent the spreading that Terrible Distemper.

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